

SOUTH AUSTRALIAN FOSSIL CHITONS

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Fig. 1-2.

THE three Chiton valves here described constitute the first record of fossil Chitons from South Australia, and Mr. W. J. Kimber is to be highly congratulated on his discovery. Two species were obtained from a bore sunk at Torrensville, and one at Gaza, S.A.

CHITON (ANTHOCHITON) TRICOSTALIS RELATA subsp. nov.

Fig. 1.

There seems enough evidence to separate this subspecies from the species which belongs to that section of the genus, *Chiton* s.s., termed by Thiele *Clathropicura*, and by Iredale and Hull *Rhyssoplax*, but Thiele's name *Anthochiton* dates from 1893, whereas the other one dates from 1910, and thus are synonyms of the subgenus *Anthochiton*.

One median valve subearinated, side slope convex; angle of divergence 80° , dorsal edge wedge-shaped apparently smooth; the pleural area transversed longitudinally by twelve shallow broad grooves, the ridges (including the outer one) twelve, comparatively slightly narrower than in the species, suggesting weatherboarding; the lateral areas have two strongly-raised, knobby ribs, the anterior one commencing to bifurcate. One can count ten of these ridges or knobs. Nearly the whole surface of the tegmentum is perforated by small holes, undoubtedly exposed by erosion of the surface layer of shell. The network of holes are probably terminals of nerve channels. Inside: tegmentum folded over posteriorly, slits 1/1 well defined, the insertion plate straight, not "frilled" as in the genus *Callistochiton*. The edge is too worn to definitely state that it was serrate, but there are indications that it was not smooth as in the genus *Lchnochiton*.

Holotype. Length 3.5 mm., width 6.5 mm., 490 feet deep, Torrensville Bore, Adelaide, South Australia. Upper Pliocene (Reg. No. D. 12883, South Australian Museum).

The subspecies differs from the species in having slightly narrower ribs on the pleural area, and the sideslope being more curved.

EOPLAX sub. gen. nov.

Only one median valve of the type species *Acanthochiton adelaidae* (described hereunder) is known. In consideration of which fact we place the species in the genus *Acanthochiton*. If the posterior valve should have more than two slits (1-1) then the species should be referred to as *Notoplax*, and *Eoplax* would consequently be placed as a subgenus of *Notoplax*.

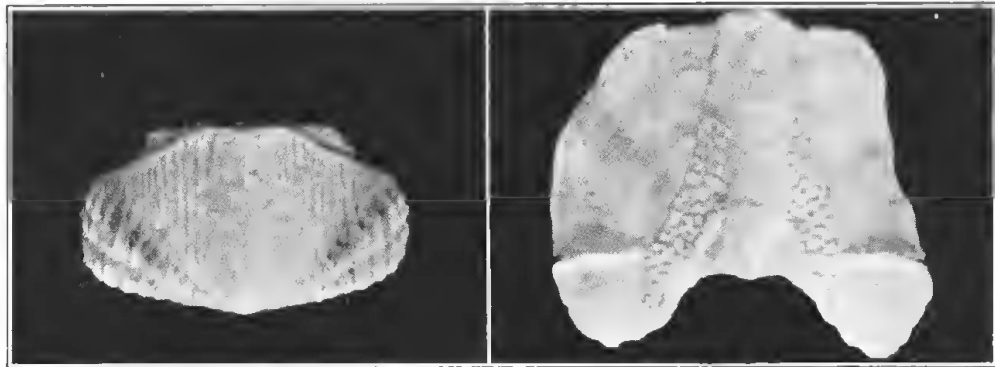


Fig. 1. *Chiton tricostata velata*
($\times 5.8$).

Fig. 2. *Acanthochiton (Eoplax) adelaidae*
($\times 5.5$).

Differs from *Acanthochiton* s.s. (or *Notoplax* as the case may be) in that the sculpture of the pleural and lateral areas of the tegmentum is reduced to a narrow strip, and does not extend to the sutural sinus by one-quarter the longitudinal width of shell.

The type species *Acanthochiton adelaidae* here described possesses a marked though blunt beak, and an exceptionally raised ridge from the slit to the tegmentum on the insertion plate, also the tegmentum is much retracted in width.

ACANTHOCHITON (EOPLAX) ADELAIDAE sp. nov.

Fig. 2.

One median valve, carinated, sideslope straight, angle of divergence 90° ; dorsal area keeled, slightly beaked; area long and narrow, the anterior margin 2 mm. wide, converging posteriorly to a width at the beak of .75 mm.; sides of area straight, surface probably ungrooved, but shallow growth lines present. Pleural and lateral areas inseparable, the tegmentum much reduced; sculpture of pleural area terminates anteriorly at 1.5 mm. from the anterior margin of the dorsal area, and consists of longitudinal rows of flat, triangular, scale-like grains, shaped like an isosceles triangle, the pleural and lateral areas inseparable, except that the grains

of lateral area are a little larger. Articulamentum: sutural laminae are too damaged to determine; sinus between evidently rather broad; insertion plates very broad, showing a strong caloused broad ridge commencing at the slit and ending on one side of the tegmentum, but suggesting in the other side (which is damaged) that it may have been continued across the tegmentum, forming there a shallow ridge. The marked feature of this *Acanthochiton* is the extreme reduction laterally of the tegmentum.

Holotype. Length 7 mm., width 7.5 mm., 490 feet deep, Torrensville Bore, Adelaide, South Australia. Upper Pliocene (Reg. No. 12882, S.A. Museum).

? ISCHNOCHITON.

One minute tail valve. Shell raised, mucro well defined, posterior slope at first steep and then becoming flatter towards the outer edge; three rather deep concentric growth grooves towards the outer margin, the portion anterior to the mucro small and largely missing; shows no sculpture other than the continuation of growth grooves of the posterior portion, but under 65 magnification three deep pits can be seen along the diagonal line at the junction of the growth grooves; posterior portion large, sculptured with minute ill-defined grains, otherwise without sculpture except for the growth grooves before named.

But for the three deep pits (seen under 65 magnifications) situated along the diagonal line which separates the anterior from the posterior area in the tail valve, and placed at the junction of the growth grooves, we should have considered it a juvenile of any one of several *Ischnochitons* which have a rather inconspicuous sculpture. The presence of these pits in the tegmentum is so striking that it will, if this feature is retained into maturity, probably remove it from the genus *Ischnochiton* s.s. Further the articulamentum of the inside is too damaged to aid in the decision.

The broken edge of the articulamentum suggests multisletting, the whole surface of the inside of the shell is perforated by intermittent concentric slits when seen under 65 magnifications.

Gaza, South Australia, 80 feet. For the present we place it under the genus *Ischnochiton*, and the presence of the three pits above described may justify it being distinguished as a new species.

Associated with the two Chiton valves from the Torrensville Bore were the following Upper Pliocene Mollusca: *Corbula paxidala* Tate (affinis), *Pellicaria howchini* Cotton (juveniles), *Turritella murrayana subrudis* Cotton and Woods, and *Turritella uericula adalaidensis* Cotton and Woods.

A number of genera, as listed below, were also recognized, but none of the species are recent.

Haliotis, *Emarginula*, *Gibbula*, two species; *Fossarus*, *Euchetus*, *Uber*, two species; *Phasianella* allied to the recent *variegata*, also numerous opercula different from the recent; *Trophon*, *Cominella*, *Clanculus* allied to *yatesi*; *Nassarius*, two species; *Turridae*, six species; *Ancilla* allied to *edithae*; *Cymatiella*, *Bembicium*, *Astrea*, *Pyrene*, two species; *Murex*, small; *Terebra*, *Vermetus*, *Dentalium*, two species; *Retusa*, *Calyptrea*, *Cerithium*, six species; *Marginella*, three species; *Pyrene*, *Anapella*, two species; *Venericardia* related to *bimaculata*; *Chioneryx* allied to *cardioides*; *Katylisia* juveniles; *Limopsis*, two species; *Myadora*, *Lucina*, *Thracia*, *Placamen*, *Neotrignia*, *Nucula*; one specimen of a species closely related to the recent *Cosmetalepas concatenatus* Crosse & Fischer. Also a few specimens of a bivalve described elsewhere in the present part of this publication.